JD: Crankshaft Position (CKP) Sensor

JD: Introduction

JD1 CHECK THE CKP SENSOR SIGNAL SENT TO THE PCM

Note: The battery should be fully charged and the starting system should be functioning properly.

- Remove the fuel pump fuse to disable the fuel pump.
- Ignition ON, engine OFF.
- Access the PCM and monitor the RPM PID.
- Crank the engine.

Is the RPM greater than 150 RPM?

Yes	No
For DTC P1336 with no start, GO to Pinpoint Test A . For DTC P1336, GO to HD16 . For all others, the CKP, PCM, and harness are working properly. RETURN to Section 3 , Symptom Charts for further direction.	GO to JD2 .

JD2 CHECK THE TIMING COVER, CKP SENSOR AND EXTERNAL TRIGGER WHEEL (OUTSIDE THE TIMING COVER) FOR OBVIOUS PHYSICAL DAMAGE

- Ignition OFF.
- Visually check the timing cover, CKP sensor and external trigger wheel (outside the timing cover) for obvious physical damage.

Do any parts appear physically damaged?

Yes	No
REPAIR as necessary. RESET the keep alive memory (KAM). REFER to Section 2, Resetting The Keep Alive Memory (KAM) . REPEAT the self-test.	GO to JD3 .

JD3 CHECK FOR PROPER CKP BIAS VOLTAGES IN THE PCM

- CKP Sensor connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) CKP Sensor Connector, Harness Side	(-) Vehicle Battery
CKP+	Negative terminal

CKP-	Negative terminal

Are the voltages between 1 - 3 V?

Yes	No
GO to JD4 .	GO to JD6 .

JD4 CHECK THE CKP SENSOR RESISTANCE

- Ignition OFF.
- Measure the resistance between:

(+) CKP Sensor Connector, Component Side	(-) CKP Sensor Connector, Component Side
CKP+	CKP-

Is the resistance between 0.25K - 1.1K ohms?

Yes	No
GO to JD5 .	INSTALL a new CKP sensor. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. RESET the keep alive memory (KAM). REFER to Section 2, Resetting The Keep Alive Memory (KAM) . REPEAT the self-test.

JD5 CHECK THE CKP HARNESS SHIELD GROUND

Note: The harness shield protects the CKP signal from electrical noise and is grounded at one end, typically near the PCM.

Note: Carry out the following resistance measurement between the CKP shield and the ground.

- Measure the resistance between:

(+) CKP_SHLD Assembly Connector, Harness Side	(-)
CKP_SHLD	Ground

Is the resistance less than 5 ohms?

Yes	No
GO to JD6 .	REPAIR the open circuit. Check for a poor ground connection. CLEAR the DTCs. REPEAT the self-test.

JD6 CHECK FOR SHORT BETWEEN CKP(+) AND CKP(-) IN THE HARNESS

- Ignition OFF.
- PCM connector disconnected.
- Measure the resistance between:

(+) CKP Sensor Connector, Harness Side	(-) CKP Sensor Connector, Harness Side
CKP+	CKP-

Is the resistance greater than 10K ohms?

Yes	No
GO to JD7 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

JD7 CHECK THE CKP CIRCUIT(S) FOR AN OPEN IN THE HARNESS

- Measure the resistance between:

(+) CKP Sensor Connector, Harness Side	(-) PCM Connector, Harness Side
CKP-	CKP-
CKP+	CKP+

Are the resistances less than 5 ohms?

Yes	No
GO to JD8 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

JD8 CHECK THE CKP CIRCUIT(S) FOR A SHORT TO GROUND IN THE HARNESS

- Measure the resistance between:

(+) CKP Sensor Connector, Harness Side	(-) Vehicle Battery
CKP+	Negative terminal
CKP-	Negative terminal

Are the resistances greater than 10K ohms?

Yes	No
GO to JD9 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

JD9 CHECK THE CKP CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS

- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-) Vehicle Battery
CKP+	Negative terminal
CKP-	Negative terminal

Is any voltage present?

Yes	No
REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.	GO to JD10 .

JD10 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
  - pushed out pins
  - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.